

Professor Elena Densușianu Pușcariu, a Prominent Romanian Lady-Ophthalmologist and Humanist

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Abstract. Elena Densușianu Pușcariu (1875-1966) was among the first lady-ophthalmologists in Romania, the first female-doctor university professor in Romanian medicine and, seemingly, the first female university professor of ophthalmology in the world (1920). She graduated from the Faculty of Medicine of the Iași University (1898), was trained in Paris (1900-1902) in pathological anatomy with André Victor Cornil and in bacteriology and immunology at the Pasteur Institute, with Ilya Mechnikov and Emile Roux. In Bucharest she worked with Prof. Victor Babeș in the field of pathological anatomy, bacteriology and immunology, and with Prof. Gheorghe Stănculeanu in ophthalmology. In 1910 she began her career in Bucharest both as a docent of the Faculty of Medicine and an ophthalmologist of the Colțea Hospital. In 1916 she returned to Iași as a chief physician [medic primar] of "St. Spyridon" Hospital and docent of the Faculty of Medicine, where in 1920 she was promoted full professor. Dr. Pușcariu was also the first woman elected president (1927) of the oldest Romanian scientific society – The Society of Physicians and Naturalists in Iași (1830). She developed ophthalmological practice, teaching and research on modern interdisciplinary bases. She made personal and original contributions to ophthalmology and published a lot of papers in Romania but especially abroad, in first line specialty journals, gaining worldwide visibility. At the same time, she insisted on the importance of health education in preventing eye diseases and their most severe complications including blindness. Prof. Pușcariu was member of several European Societies of Ophthalmology too. She continued her activity until her death that occurred after a long, valuable and successful professional life, on May 20, 1966. Elena Pușcariu, an example of medical pioneering, perseverance, deontological principles and human complexity, should have been better appreciated in her lifetime.

KEYWORDS: Elena Pușcariu Densușianu, ophthalmology



Fig.1. Elena Densușianu

The Densușianus: a humanist family, devoted to the nation, moral values and education.

Elena Densușianu Pușcariu (1875-1966) (Fig.1) remains one of the personalities in the history of Romanian medicine who marked the glorious beginning of the Iași medical school,

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particularly of ophthalmology, and not only in Iași, but also in the whole country. She was the daughter of the renowned humanist Aron Densușianu (1837-1900), jurist, linguist, folklorist, literary historian and Romanian writer, originally from Densuș (Transylvania), professor of Latin at the University of Iași, corresponding member of the Romanian Academy, and of his wife, the pianist and writer Elena Circa, born in 1841 in Cenad-Săcele, Brașov (former Kronstadt) county. They married in 1864, in the city of Făgăraș, where Aron Densușianu was a mere law clerk. In turn, Elena Circa came from an old family from Țara Bârsei (Land of Bârsa), and was related to Ioan Bran de Lemeni (Lemeny) and Ioan Cavaler de Pușcariu [John Knight of Pușcariu], figures with remarkable activity and representativeness in the 19th century Romanian politics in Transylvania (1,2). Aron Densușianu came from an equally old family of priests and patriotic scholars from the Land of Hațeg (Transylvania), radiating the latinising spirit of the “Transylvanian School” social-cultural movement and playing an important role in the affirmation of the Romanians in Transylvania (1). Upon his death, the outstanding Romanian historian A.D. Xenopol paid tribute to him. The immediate genealogy of the Densușianus started from the priest Bizantie (Byzantie/Vyzantie) Pop from the Transylvanian noble family Pop de Hațeg. Born in Măceu, Bizantie Pop (1798-1857) was a parish priest in Densuș, a locality from which his distinctive family name itself later came - Densușianu. Bizantie restored the famous church in Densuș erected around 1100, where he served, but he also collected folklore. His son Nicolae Densușianu brought back to light this collection, gathered over time: “the collection of songs of my good and unforgettable father Bizanțiu Densușianu from Măceu and written while he was in Blajiu” [Blaj], in 1821, when he was studying theology. Like any enlightened priest, Bizanțiu did not fail to collect folk medicine recipes, through which, if necessary, he would have helped those in need in the community (3). Bizanțiu Pop Densușianu was also an active supporter of the 1848 Revolution in Transylvania, fighting for the rights of Romanians and suffering for it. He escaped death

only by a lucky chance. His sons also proved to be good Romanians. Among the children, all of them educated, perhaps the most famous were Aron, the already mentioned lawyer, philologist and man of culture, along with Nicolae Densușianu (1846-1911), a corresponding member of the Romanian Academy, a jurist and a historian fascinated by «Prehistoric Dacia», about which he wrote a famous and controversial book. Among father Bizanțiu's grandchildren, two of Aron Densușianu's descendants stood out: Elena and Ovid, but there was a third one too, Eliza. The memory of Elena, Eliza and Ovid Densușianu's mother, Elena Aron Densușianu,



Fig.2. Friedrich Müller. *Basme din Transilvania*, București: Biblioteca Minervei, Institutul de Arte Grafice și Editură, 1914.

was perpetuated through her translation from German of some “Transylvanian fairy tales” by Friedrich Müller (Fig.2). It was also due to a short story of social criticism she authored, entitled “*A social crime or The consequences of the absence of a law for the search for paternity*” (Bucharest: Cronica Thoma Basilescu Newspaper Typing

House, 1906). “Transylvanian fairy tales” had been recorded by Friedrich Müller (1828-1915), a Saxon historian and ethnologist from Transylvania, Evangelical bishop of Sibiu. In contrast, “*A social crime or The consequences of the lack of a law for the search for paternity*” was a work of attitude. Indeed, Elena Circa Densușianu addressed what is generally called the “anxiety crisis in the face of paternal responsibility”, developed by men around the birth of an illegitimate and unwanted child. In 1906, when her writing appeared, the Romanian civil code did not sanction the real possibility of establishing the paternity of a child born out of wedlock, Prof. Valeriu M. Ciucă pointed out (4).

Moreover, apart from conscience, feeling and freely consented recognition, neither the legal medicine of the time had infallible techniques for establishing paternity, nor did the national civil code specify provisions in favor of the lovechild, the “bastard”. The writer's moralising pages proposed the adaptation and adoption of measures inspired by the Austrian civil code, intended to protect the natural child, facilitating his/her growth and education, in a society that was quite hypocritical, displaying only formally, even ostentatiously, respect and honour towards the traditional family, as well as the love and understanding owed to one's neighbour. The theme inspired by the legal sphere perhaps expressed both her righteous spirit and an awareness exerted by the very professions of her husband and brother-in-law, Aron and Nicolae, respectively. Sometimes, the two Elenas, mother and daughter, are confused.

Elena Densușianu: professional biographical landmarks

Childhood at Făgăraș. In the Aron and Elena Circa Densușianu family, five children were soon born, of whom three survived: Maria Eliza, born on August 19, 1871, the future Mrs. Vespasian Erbiceanu¹; the future famous philologist and academician Ovid Densușianu, born on December 29, 1873; and, on March 3, 1875, their sister, the future talented

ophthalmologist, Elena Densușianu, saw the light of day. Everything happened in Făgăraș, a town where their father, a member of the Municipal Council, worked as a devoted lawyer and patriotic man of letters. It was a turbulent era, when the father was briefly in preventive detention (October 21-November 20, 1873) in Târgu Mureș, accused of the “crime of disturbing public peace”. He was released by the decision of the Royal Curia of Pest. Even Aron's mother, Sofia Pop, had demanded justice, saying, among other things: “My deceased Byzanțiu, parish priest in Densuș, was stripped of all his wealth in 1848 and tied to the reins of a chariot and thus transported to be shot by Hungarian patriots, but divine Providence and his righteous deeds freed him from the hands of the villains.” And proudly, she thus concluded her complaint in defense of her son Aron: “But I appeal to the nation not to free him, but to imitate him” (5). Of course, in defending justice.

Moving to Iași. In 1881, the young family moved to Iași, in Moldavia, where Aron Densușianu was appointed substitute professor and, from October 25, 1883, full professor at the Department of Latin Language and Literature of the University. After Prof. Andrei Vizanti's resignation in 1898, Densușianu, in addition to his basic duties, became a substitute professor of the Department of Romanian Literature History, until the end of 1899. In 1900, the professor passed away unexpectedly. In 1897-1898, together with Prof. Ion Găvănescul, Densușianu had been part of the Joint Commission that brought into line the common regulations of the Faculties of Philosophy and Sciences with the situation created by the new law concerning the secondary and higher education in 1898 (6). Concurrently he taught at the United Institutes, at the Boarding High School [Liceul Internat] and at the “Maria Doamna” Ladies' High School, a private secondary school in the Copou neighborhood of Iași, whose director was his wife for a while. At this very School he was the “director of studies”, member of the School's

¹ Vespasian Erbiceanu (1865-1943) – magistrate, minister of justice, corresponding member of the Romanian Academy.

administrative council, and also a lawyer, whenever necessary. During her time in Iași, Elena Circa Densușianu was indeed the director and German teacher of the aforementioned “Maria Doamna” Ladies’ High School [Pension de Domnișoare], but equally a dedicated feminist. Arriving in Iași at school age, Elena, her daughter, graduated from the “Oltea-Doamna” Girls’ High School [Liceul de fete]. After getting her Baccalaureate, in 1893, she enrolled at the Faculty of Medicine, graduating in 1898. She was among the first women with the “doctor of medicine and surgery” diploma obtained in Romania. Her thesis, no.96, defended in October 1898 at the Faculty of Medicine in Iași, synthesised her “Considerations on breast neoplasms, especially from the point of view of pathological histology” (Iași: National Printing House, 1898). In his “Diary (1893-1908)”, Teohari Antonescu, newly appointed professor of archaeology at the University of Iași, young and unmarried, described an evening dance party at Aron Densușianu’s in March 1896, where he met his daughter, the medical student Elena, whose small paintings were next to a piano, on a table, without making any impression on him. Antonescu engaged her in a dialogue about the value of the arts, which drifted towards another topic: “the power of judgment of the fair sex, whether women have the same capacity as men, whether it is good for women to have equal political rights with men and whether they should occupy the same positions that men occupy”... She also “said that she did not like the green colour, because it was too cruel and pronounced «cruel» with a tremor. (...) She said that she liked the gray colour. In any case, the girl was not stupid, she spoke quite well and with excellent clarity in the intonation of words and their placement in sentences”, she was “beautiful and even intelligent”, but “very badly dressed” (7).

Between Iași, Paris and Bucharest.

From 1900 to 1902 Dr. Elena Densușianu was trained at the Pasteur Institute in Paris, with famous professors, bacteriologists and immunologists: Emile Roux, Ilya I. Mechnikov – a Nobel laureate in 1908, and Amédée Borrel, whose name is linked to the identification of the *Borellia bacterium*; Jean Binot was head of the

laboratory, and Edmond Sergent, who, among other things, would head the Pasteur Institute in Algiers and be a member of the Academy of Sciences, was the preparator. At the same time, she also worked in the pathological anatomy laboratory of the eminent Professor André Victor Cornil, co-author, together with Victor Babeș, of the first treatise on bacteriology and histopathology in the world: “*Les bactéries et leur rôle dans l'anatomie et l'histologie pathologiques des maladies infectieuses*” (Paris: Alcan, 1885), rewarded with the Monthyon Prize of the French Academy of Sciences.

In Paris, the young lady-doctor participated, as a sole author, with two communications in the XIII-th Medical Congress organised in August 1900, on the occasion of the International Universal Exhibition: one presentation, given on August 3, described “The Histology of Chronic Arthritis and Especially of Gonorrheal Arthritis”; another one, delivered on August 4, discussed the “Degeneration and Regeneration of Motor Nerve Plates after Sectioning Peripheral Nerves”. It is interesting to note that her presentation in the afternoon session on August 4, focusing on nerve regeneration, had been preceded by a *Report* presented by Professors Gheorghe Marinescu and Victor Babeș, on the “Role of microglia in the evolution of inflammation and tumors” and by a *Communication* by Prof. Marinescu dealing with “Phenomena of regeneration and repair in nerve centers”. At the Congress, the Romanian National Committee also included Prof. Emil Pușcariu. In 1902, Densușianu published in Paris, seconding the great Babeș, a study on “Hematogenous nephritis of the pyramids”, with 11 plates, in *Archives de Médecine Expérimentale et d'Anatomie Pathologique* (8).

Back to the country. Returning to the country, she worked as a professor assistant in Bucharest with Prof. Victor Babeș, at the Institute of Bacteriology he founded in 1887, a Romanian pioneering institution of international excellence, deepening the aspects of pathological anatomy and bacteriology, which dominated the medicine of her time. Concurrently she was appointed by competition secondary physician [medic

secundar] of the Administration [Ephoria] of Civil Hospitals in the Capital. So, after Paris, she continued her training in Bucharest with Masters like Babeş, the prominent pathologist and bacteriologist, and Marinescu, the renowned neurologist, Charcot's beloved disciple. The same year, 1902, Elena married to Prof. Emil Ion Cavaler de Puşcariu (1859-1928), born in Veneția de Jos, Făgăraş County [Land of Făgăraş], doctor of medicine of the University of Budapest (1886). He was a distant relative of hers, but he was above all a personality in the world of Romanian and European normal and pathological bacteriology and histology, a follower and exceptional collaborator of Babeş. Since 1890 he was a professor of Histology at the Faculty of Medicine in Iaşi, the city where he founded and directed the second Anti-Rabies Institute in the country (1891) after Bucharest and where he successfully developed and practised an original method of anti-rabies vaccination - the Puşcariu method, renamed Babeş-Puşcariu in 1912, appreciated all over the world due to its extremely low complications (9,10).



Fig.3. Elena Puşcariu

Although she had lost her father right when she was a student, fate was favorable to Elena Densuşianu: in addition to intelligence and diligence, she was undoubtedly helped by family ties, including her extended "Transylvanian family", which shared the same ideals of emancipation and affirmation for Romanians and Romania, as well as the increasing involvement of women in society. The Densuşianu, Circa, Puşcariu, and Babeş families were part of it. In 1910, in Iaşi, Elena Puşcariu became a docent in Ophthalmology, a degree which allowed her to teach courses. That year, as a docent and co-author, she published together with Professor Gabriel Socor (1848-1928), head of the Eye Diseases Clinic in Iaşi, the paper "Angiome caverneux de l'orbite" in the *Medico-Surgical Journal of the Society of Physicians and Naturalists in Iaşi* (1910) (11).

For a while she lived in Bucharest again, where she transferred according to the Notice no.35124/June4, 1912. There Elena Puşcariu worked as a docent and assistant professor in the Ophthalmology Clinic of Professor Gheorghe Stănculeanu (1874-1917) (known as Stănculescu too) (12). She was the first female-doctor head of an ophthalmology clinic in Romania (Fig.3).

Proficient healthcare in Iaşi. In 1916, when Romania entered World War I, she returned to Iaşi as a chief physician [medic primar] of the "Saint Spyridon" Hospital. The Clinic and the Department of Ophthalmology, created there in 1887 under the authority of Professor Gabriel Socor, were led, between 1916 and 1920, by Prof. Dumitru N. Manolescu (1885-1974), a reputed specialist. She efficiently participated in the care of the wounded and the sick hospitalised at the "Sf.Spiridon" Establishments during the War (1916-1918), studying and treating the peculiarities of their pathologies and traumas, especially the ocular ones, while deepening her knowledge and skills. According to a contemporary, the future Prof. Gheorghe Năstase: "Mrs. Prof. E. Puşcariu, ...with her rank of colonel, was a general". After Prof. Manolescu left for the Capital in 1920, *Elena Puşcariu was the first female doctor to become a university professor in Romania* and probably the first female university professor of ophthalmology in the world or

among the pioneering ones. It was to the credit of the Faculty of Medicine in Iași that once more prejudices hindering women's emancipation were overcome, and Elena Pușcariu, one of its former students, was entrusted with the management of the Clinic and of the Faculty Department of Eye Diseases. From 1920 to 1940, when she retired without interrupting her activity, she truly created and developed, on modern bases, the Eye Diseases Clinic of the "Sf. Spiridon" Hospital: the number of beds increased from 20 to 40, ophthalmological education, practice and research were consolidated.

During the difficult period that followed the Great War, she got involved not only in training medical students, but also the medical staff, young doctors and nurses, which were in such short supply and desperately needed. Step by step, starting in 1921, Prof. Pușcariu managed the Eye Diseases Clinic of the "Sf. Spiridon" Hospital and improved patients' care and health education, diversifying the ophthalmological approaches. She set up a specialty Library and also a Museum of the Clinic, with didactic casts and teaching drawings reproducing various pathologies, real clinical cases (15). Soon her mouldings were internationally known and mentioned in *Archives d'Ophthalmologie* and *The British Journal of Ophthalmology* and *Annales d'ophtalmologie* (16,17). Like her husband, Professor Emil Pușcariu, known to have been a sculptor too (18), she was a very gifted draftsman, a visual artist. These personal qualities enabled her to achieve excellent casts and teach her coworkers how to make them. Such didactic molds were later correctly and exquisitely co-

loured faithfully reproducing lesions of the eye, which sometimes extended to the whole face (Fig.7.a) (15,19). In 1927 she edited in Bucharest her two-volume illustrated course of eye diseases: "Course of Ophthalmological Clinic and Theory (Photographs and color drawings of patients in the Clinic)" (Part I-II). (Fig.7. c.)(13). Beside specific pathology and therapy, original case reports and epidemiological features, her course described laboratory and experimental approaches, and mentioned medical historical aspects. The books included Pușcariu's own colour plates and illustrations.



Fig. 4.a. Chemical analyses Laboratory



Fig.4.b. Visual field test Laboratory



Fig.4.c. Electric group and UV treatment Laboratory

Even though confined to an extremely limited space, her Clinic looked like a little "institute", endowed

with a small operating room and a darkroom for patients' examination, spaces for electrotherapy, separate wards were intended for patients according to their ophthalmic and general diseases, laboratories existed for serum diagnosis (syphilis, tuberculosis etc), biochemical testing, anatomic-pathological examinations (Fig.4,5,6) (14). Eventually a biobase laboratory was added, directed by Dr. Jules Nitzulescu, a Rockefeller scholar (1927-1929) (14,15).

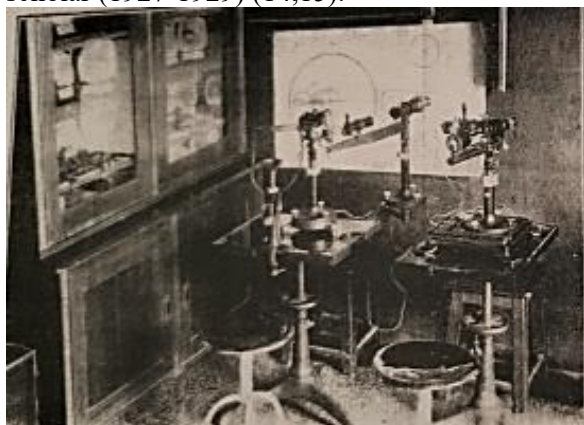


Fig.5.a. Large optical devices



Fig.5.b. Camera obscura and Table for casting and casts

She paid attention to surgical instruments and techniques, including plastic surgery. The autoclave ran on wood and the poupinel, on gasoline. The refrigerator was a sort of icebox. Power wires abounded when, in 1928, electrical installations changed from 150 Volts continuous to 220V alternating current.

Puscariu was particularly prolific as a clinician, surgeon, researcher and medical teacher.



Fig.5.c. Library and Room for eyeglass prescription



Fig.6.a. Anatomic pathology Lab



Fig.6.b. Serology Laboratory

In the first decennium of her activity as head of the Chair and Clinic of Eye Diseases she had performed over 2500 operations and

published more than 100 scientific papers mainly as a sole author, but also with her coworkers, in representative journals of ophthalmology in several reference countries of the world: France, Great Britain, Germany, Latin America, Italy, and USA (15). Among the international journals, her articles frequently appeared in the *British Journal of Ophthalmology*, but also in *Annales d'Oculistique*, *Annali di Ottalmologia e Clinica Oculistica*, *Bollettino di Oculistica*, *Archives d'Ophthalmologie*, *Klinische Monatsblätter für Augenheilkunde*, *Zentralblatt für der gesamte Ophthalmologie*, *Archives of Hispano-American Ophthalmology*, *American Journal of Ophthalmology*. In one of these periodicals published in France, *Annales d'oculistique*, all the reports of the Romanian Society of Ophthalmology usually appeared. Likewise, all the communications presented within the Romanian section of the French Biology Society were included in the "Compets rendus des séances de la Société de biologie et de ses filiales". Her original scientific contributions, some of them of great interest, were cited or reviewed in various widely circulated international treatises and journals (20-30). In her impressive work, Elena Pușcariu, a personality of universal culture, addressed almost all the specific ophthalmological issues but she equally treated and investigated ophthalmological implications of general pathology and social environment. Prof. Pușcariu (Fig.8) perfectly illustrated European integration of Romanian medicine during the interwar period.



Fig.6.c. Operating room

Elena Pușcariu's main scientific contributions

In *ophthalmological semiology* she described particular signs that now bear her name: 1. in trachoma – the “ring sign” - and 2. in ocular syphilis – the deepening of the zygomatic region, the “Pușcariu sign”, verified in 10-14% of patients and the syphilitic headache, present in most patients, but without having the previously described character, nor a specific location.



Fig.7.a. Wax Cast. Orbital Tumour (1936)
University Medical History Museum

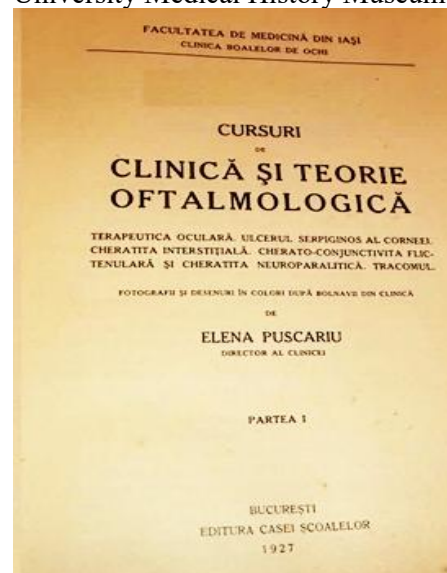


Fig.7.b.Elena Pușcariu.Ophthalmological Clinic and Theory (13)

She experimentally induced tuberculous keratitis in laboratory animals, using the Calmette-Guérin bacillus and thus investigated ocular tuberculosis. Studying corneal herpes, she performed in Romania some of the first experimental transmissions of the disease from human corneal herpes to the rabbit cornea (Premier Bulletin of the Eye Diseases Clinic of the Faculty of Medicine of Jassy, 1924, p. 50) (14). Alone or with her collaborators, she investigated almost all the ocular implications of general pathology, beside various important aspects of occupational hygiene and social medicine.

Ophthalmological pathology

Among her favorite topics **trachoma** (granular conjunctivitis) held a special place because of its frequency in population by then; it was a condition for which she carried out the first accurate clinical-epidemiological reference syntheses, at a time when some foreign books presented many notions incorrectly, or others did not describe the initial phase of the disease, which was ignored, hence untreated. In Paris, at a young age, Pușcariu analysed, with Dr. Ernest Pinoy from the Pasteur Institut, the neural effects of *Potassium cantharidate*, used in the treatment of *granulations* (trachoma) (30). We owe her an accurate description of trachoma (granular conjunctivitis) incipient phases and treatment, worldwide known such as described in her work “Le trachome (La conjonctivite granuleuse). Au point de vue clinique et avec des considérations sur son état en Roumanie – 1914”, published at a time when some foreign books presented many notions incorrectly, or others did not describe the initial stages of the disease (31-40). Her paper appeared in 1914 was reviewed by specialists in outstanding international journals such as: H. Haward Bywater in *The Ophthalmoscope. A Monthly Review of Current Ophthalmology*, London (24), who commented her therapeutic and prophylactic strategy, noticing the author’s “excellent bibliography”, and Ernest Thomson, who, in the same periodical - *The Ophthalmoscope*, reviewed “Puscariu, Elena. The treatment of trachoma (Traitement du trachome) in *La Clinique Ophthalmologique*”, insisting on her therapeutic methods (25).

Clinically, Pușcariu discovered and described the “ring sign” – a “ring” formed by the semilunar fold and the cul-de-sac that trachomatous tissue infiltrated. She described a *benign trachoma*, leaving no traces after healing. A special observation sheet was introduced for trachoma patients, from which data on the origin of the infection, the presence of other patients with trachoma, the disease course and previous treatments could be quickly obtained.



Fig.8. Elena Pușcariu

The contagiousness of the trachoma was debated at a Congress of the *League against trachoma* held in Paris in 1937, some authors being of the opinion that in adults’ contagion almost does not exist. Facts contradicting this opinion were exposed by Prof. Elena Pușcariu and Dr. Ecaterina Triandaf in the *International Journal of the Trachoma* [Revue Internationale du Trachome] in 1939 (39). Evidence resulted from clinical observations showing that numerous children got infected in orphanages or from breastfeeding women, whereas numerous adults were contaminated during military service, as well as from conjugal trachoma in several cases, when the wife had contracted trachoma from the husband who got sick in the army. Apart from these convincing facts, a trachoma epidemic occurred among the inmates of the Socola Asylum in Iași in 1928-1929, most of the cases being between 20 and 40 years of age. This epidemic formed the subject

matter of a doctoral thesis Prof. Pușcariu supervised in 1930. She envisaged special measures regarding trachoma prevention as well: conferences, brochures publication, visits to schools; at the governmental level, she suggested a budget for prophylaxis to be provided; another point was limitation/prohibitions of immigration to the country of people with trachoma; syphilis, tuberculosis and gonorrhea transmission had to be diminished and controlled. *Diabetes mellitus* represented another cause of severe eye diseases and after 1921 insulin therapy was only at its very beginning. She gave lectures particularly in poor communities, suggested protection measures for the sick and advocated for them. She constantly claimed that increasing ophthalmology services in the country, along with the number of sisters of charity and visiting nurses was strictly necessary. (41,42).

Pușcariu thoroughly investigated ocular syphilis (retrobulbar optic nerve gum), neurosyphilis, sympathetic ophthalmia, neurorretinitis nefritica, malarial retinopathy, oculo-palpebral tumors, mixed tumors of the eyelid, Meibomius glands epithelioma, corneal epitheliomas, conjunctival plasmacytoma, choroidal sarcoma, Jensen's chorioretinitis, glaucoma, diabetic cataract, iridocyclites, eczematous keratoconjunctivitis which she called "scrofulous ophthalmia", gonococcic conjunctivitis, optochin effect on conjunctivitis blennorrhoea etc. One of Pușcariu's scientific articles considering optochin effect on blennorrhoeic conjunctivitis was reviewed by Ernst Thomson in *The Ophthalmoscope* (27).

As previously specified, attention was paid to **ocular syphilis**. Already in 1914 she reviewed and published the report on ocular syphilis Dr. Louis Dor from Lyon presented on May 4 of the same year, at the Congress of the French Society of Ophthalmology (43). With her coworkers and doctoral students, Pușcariu undertook a huge analysis of these aspects since the beginning of her career, and almost set up a "monograph" on this subject, including investigations of ocular syphilis, statistical research, comparative frequency of serodiagnosis and extraocular clinical signs, ignored syphilis, syphilis and blindness; observations of rare forms

of ocular syphilis (primary and secondary syphilis of the conjunctiva and eyelids, tertiary syphilis of the eyelids; diffuse and gummatous tarsitis; gums of the bulbar conjunctiva; gum of the papilla (Jensen chorioretinitis juxta papillaris); syphilitic pseudo-tumour of the orbit, retrobulbar gum of the optic nerve (14,44-51). Mainly edited in *Archives d'Ophthalmologie* (1931), her studies in this field were often cited. The famed Prof. Igerscheimer and other specialists did it (26, 27, 52). Chinese physicians were among them too (48). Pușcariu denied the efficiency of malaria therapy in ocular syphilis, being among the first authors in the world to debunk this idea, launched by von Jauregg and rewarded with the Nobel Prize in 1927. She concluded that malarial fever exerted no curative effect in patients with progressive general paralysis (PGP), having primacy worldwide in this respect (52,53). She was among the close collaborators of the Pilot Malariotherapy Center organised at the Socola Hospital in Iași in 1927 with the support of the Rockefeller Foundation. Socola was the second European Center after Horton in Great Britain, with which tight cooperation developed. As a professor of ophthalmology at the Faculty of Medicine of Iași during the interwar period, Pușcariu conducted sustained research on the ophthalmological complications of neurosyphilis and of malaria itself. The large number of patients hospitalised and treated at the Malaria Therapy Center (Rockefeller) in Socola, Iași - from 1922-1952 approximately 9000 patients with neurosyphilis - undoubtedly favoured these approaches. Even though she pointed out the inefficiency of therapeutic impaludation (malaria fever therapy) for combating neurosyphilis, she could simultaneously carry out studies of neuro-ophthalmology, elucidating some other aspects. In 1910 both the Japanese bacteriologist Hideyo Noguchi and the Romanian neurologist George Marinescu identified the syphilitic spirochaetes in the brain of PGP patients, while Josef Igerscheimer discovered the same spirochete in interstitial keratitis. Elena Pușcariu's team conducted an important statistic, the largest in the world, on a number of 11,087 patients, which demonstrated that optic neuritis was determined

by syphilis in 66.19% of cases, the conclusions being similar to those of other renowned authors such as Victor Morax, Wilhelm Unthoff, Josef Igerscheimer. Another conclusion that emerged from this statistic demonstrates that in 35% of syphilitic optic neuritis the seroreaction was negative; this aspect was still insufficiently known and opened new perspectives in diagnosis and treatment (14, 49).

Elena Pușcariu equally studied the impact of other nervous diseases on the eye, such as amyotrophic sclerosis, nephritic neuroretinitis and neuroretinitis in general, paraganglioma, retrobulbar neuritis in cases of meningitis etc (54-59). Similarly, to other authors contemporary to her she used to develop the same topic in various journals and languages and also edit excerpts of her articles as separate brochures. She thus contributed to the development of neuro-ophthalmology in her country. In fact, many of her the in-depth studies constituted firsts in Romanian ophthalmology.

Glaucoma was another main ocular pathology Prof. Puscariu approached. In 1926, with her collaborators Drs. V. Cerkez (Cerchez) and J. Nitzulescu, she investigated experimental and clinical facts connected with hypertonies and hypotonies after subconjunctival *injections with pilocarpine* (14, 60,61). One of these papers cited in Albert Peters' book *Das Glaukom* (1930), along with other studies, was part of her research on glaucoma (30, 60).

Cataract, a classic pathology, was analysed especially when associated with *diabetes mellitus*, both in young patients and in the elderly. Due to the lack of preventive and early treatments, cases of *cataracta brunescens*, hence advanced stages of diabetes induced eye's lens degeneration, were diagnosed. The surgical therapy was already associated not only with diet, but with insulin administration as well (62-65). Concurrently it represented a social problem.

Benign and malignant tumours were another complex pathology affecting the eyes. Elena Pușcariu investigated and operated different cases of the kind, and then reported: teratoma, paraganglioma, eyelid sarcoma, acromic and pigmented naevus carcinoma of the

conjunctiva, other epibulbar cancers, extensive oculo-palpebral and nose tumours, epitheliomas, diagnosis of papilar stasis etc (14, 58, 66-72).

In fact, her complex training in ophthalmology, anatomo-pathology and bacteriology enabled her to more easily diagnose less common diseases, such as the paraganglioma, a generally benign neuroendocrine tumour, dermo-lipo-chondro-adenomas; xeroderma pigmentosum and epibulbar epitheliomas or plasmomas of the conjunctiva.

Other pathologies. Among other rare cases, Pușcariu described suppurative iridocyclitis of influenza origin; corneal nodular opacities (Groenouw disease); *pigmentation of the conjunctiva in normal individuals and in cases of keratomalacia in adults*; eczematous kerato-conjunctivitis (14,77-80). Another complex case she reported was traumatic enophthalmos with optic nerve atrophy and mydriasis (81).

Surgery. Prof. Pușcariu practised surgery for both glaucom and cataract. Classic along with personal surgical procedures, such as the oblique facial flap for cicatricial ectropion of the lower eyelid; correction of oculo-palpebral ptosis lifting the eyelid with two tarsal tabs (method described in *Le premier Bulletin* .., no.2, 1924); the upper palpebral flap for symblepharon (method described in "*Revista Științelor Medicale*" [The Journal of Medical Sciences],1913); orbital occlusal surgery in advanced cancer (eyelids and globe) (described in the journal "*Spitalul*" [The Hospital], 1919) were performed in the Iași Ophthalmological Clinic with the best results (14,15). Plastic surgery was included (15,73,74). In case of oculo-palpebral neoplasms she performed excision of lids and enucleation of the eyeball, followed by occlusion of the orbit. Her paper *Extensive oculo-palpebral neoplasm. Excision of lids and enucleation of the eyeball....* (1934) included seven illustrations of her technique and results (69).

Other techniques were the sclero-corneal trepanation in glaucoma, the intracapsular cataract extraction; the conjunctival advancement and conjunctival flap in cataract surgery (74). From the beginning of her activity at the Clinic in Iași, intracapsular cataract extraction was performed according to the Stănculeanu method,

which only later was appreciated in Western ophthalmology, as she declared in 1929 (75). Professor Gheorghe Stănculeanu, a remarkable Romanian ophthalmologist, had been her mentor in Bucharest. Dr. Pușcariu mentioned that after numerous intraocular operations, in her clinic there was not a single case of sympathetic ophthalmia, a complication that often saddened the statistics of all other operators. In cases of sympathetic ophthalmia, which were very rare in her clinic (3 cases in 12 years), great emphasis was placed on medical treatment, and 2 cases were cured (76).

Prof. Elena Pușcariu and her close collaborator, Dr. Dumitru Lăzărescu, also described the case of a 92 year old patient they equally operated for an enormous vegetant epithelioma of the nose, obstructing his vision he suffered from for 4 years (14). “A complete destruction of the neoplastic tissue was obtained by diathermocoagulation, without fear of seeding abnormal cells and avoiding a significant hemorrhage to occur. After the complete extirpation of the nose, except for the posterior half of the nasal wings, which were not invaded, in the same session the enormous loss of substance was covered by a mixed Indian-French rhinoplastic procedure, which I did not find described in the classic technical treatises, and which consisted of 3 flaps: a frontal one with the pedicle at the eyebrow head, turned over with the skin surface towards the nasal cavities and the tip of the suture flap at the level of the nasal philtrum, its edges being well sutured all around to the neighbouring skin. Over the bleeding surface of this flap, two other horizontal facial flaps were brought together by sliding and sutured end-to-end on the midline with fixation points on the twisted frontal flap. The surgical result was good with healing in 10 days, and an aesthetic correction of the nose lobe to be performed later. A rare pathology she treated with the renowned professor of surgery Nicolae Hortolomei was the *carotid paraganglioma* (58).

Health education. Dr. Pușcariu did not neglect the education of the general population for the prevention of blindness, printing in Bucharest in 1913 and 1914 popularisation works, distributed in schools, train stations and

town halls all over the country: “Some instructions for the campaign against granular conjunctivitis” (1913), followed by a second one, in collaboration with Dr. Adela Leonida, secretary of the “Friends of the Blind” Society: “Tips for the prevention of blindness” (1914) (41,42). However everytime she introduced people to ophthalmology or presented the social incidence and prevalence of eye diseases, Elena Pușcariu never missed to point out the importance of education for health and prevention of visual impairments particularly in disadvantaged persons and marginal social classes (82,83, 84). In 1935, once again, she outlined the importance of medical ethics and deontology.

Professional visibility

Her numerous studies – around 100 only until 1930 – were published not only in Romanian periodicals, but also in international journals, in French, English, German or Italian, in France, Germany, England, the United States of America, Italy, Latin-America. Towards the end of her life, in 1962, she published “Ostéopathies dans les syndromes oculaires hérédofamiliaux” in *Annales d'Oculistique*, and in 1963, also in Paris, at the Doin Publishing House, her synthesis “Vingt syndromes oculaires hérédofamiliaux et congénitaux” appeared, being reviewed in some periodicals. Among the international journals, her articles were published in *The British Journal of Ophthalmology*, but also in *Annales d'Oculistique*, *Archives d'Ophthalmologie*, *Annali di Ottalmologia e Clinica Oculistica*, *Bollettino di Oculistica*, *Klinische Monatsblätter für Augenheilkunde*, *Zeitschrift für Augenheilkunde*, *Zentralblatt für der gesamte Ophthalmology*. From the very first research, her observations and suggestions, some original and interesting, were cited and commented in the international literature. She was a member of the Ophthalmological Societies of France, Great Britain and Italy. In all her work, she demonstrated a special clinical sense, vitality, and made important contributions, giving ophthalmology in Iași a truly international dimension. In addition, in Iași she initiated an Ophthalmology Society - *Société d'Ophtalmologie*, and, on the model of the *Bulletin of the*

*Society of Physicians and Naturalists in Iași*², at her initiative, “*Le premier bulletin de la clinique des maladies des yeux de la Faculté de Médecine de Jassy*” started to be edited in French, of which only two issues were published in 1923, no.1, and in 1924, no.2 (15). She constantly treated and investigated ophthalmological implications of general pathology and of the social environment. Therefore, education for health of the population was highly important for her, as it could prevent many eye diseases and their most dangerous, irreversible and disabling consequence - blindness.

Ophthalmology, a lifelong passion

Several years after her retreat in 1940, she moved to Bucharest where part of her family still lived. In those tormented times, she continued her research activity. She worked with Professor Constantin Parhon at the Institute of Endocrinology he created in 1946, and the Institute of Gerontology her former Master in Iași founded in Bucharest in 1952. Professor and academician Parhon had also been the dean of the Iași Faculty of Medicine (1923-1926) and director of the Socola Hospital, when Prof. Puscariu brilliantly illustrated Romanian ophthalmology in Iași. In those years she focused on the ocular alterations in old age (85). By the end of her life, in 1959, Elena Puscariu authored an article titled “À propos de l'ophtalmie sympathique. Particularités présumées de son agent inconnu” [On sympathetic ophthalmia. Presumed peculiarities of its unknown agent], that appeared in a French journal - *Archives d'Ophthalmologie et Revue Générale d'Ophthalmologie* (76). In 1962, in the same journal she published another paper on “L'hérédité des syndromes héréditaires familiaux. Rétinite pigmentaire d'origine médicamenteuse et suite à des maladies virales” [The inheritance of familial hereditary syndromes. Drug-induced retinitis pigmentosa and retinitis pigmentosa following viral diseases] (86). Also in 1962, another paper of hers was included in “*Annales*

d'Oculistique”: “Les ostéopathies dans les syndromes oculaires familiaux héréditaires. Arthrite et ostéopathies dans les syndromes acquis” [Osteopathies in hereditary familial ocular syndromes. Arthritis and osteopathies in acquired syndromes] (87). In 1963, always in Paris, in the Doin Publishing House, her last book was edited under the title “20 syndromes oculaires héréditaires et congénitaux” [20 heredo-familial and congenital ocular syndromes] (118 p, 21 fig.) (88), which was reviewed in some periodicals (89-91). In a review published in an issue of the *British Journal of Ophthalmology* (1965), her booklet on “20 syndromes oculaires héréditaires et congénitaux” was considered just a summary of various already known aspects, even though based, partly at least, on her own clinical cases and literature (89). The reviewers considered that in her small book 20 syndromes were described that involved the eye and which (s)he³ divided into two groups: with and without bone involvement. In the first group (s)he described the phakomatoses (von Recklinghausen's disease, Bourneville's disease, Sturge-Weber-(Krabbe) syndrome, Laurence-Moon-Bardet-Biedl syndrome, retinitis pigmentosa due to drugs, retinitis pigmentosa due to viral infections, der Hoeve's syndrome, William-Marfan's syndrome, and Weill-Marchesani's syndrome). The second group was divided into three classes: infectious syndromes (toxoplasmosis and rubella syndrome [rubella embryopathy]; ectodermatoses (Rothmund's syndrome, Werner's syndrome, xeroderma pigmentosum and von Hippel-Lindau's disease), and 3. the cranio-facial dysostosis (Apert's syndrome, Crouzon's syndrome, oxycephaly, mandibulo-facial dysostosis, Hurler's syndrome and hypertelorism). “Although the individual descriptions of these various conditions are interesting and include case reports of patients seen by the author, it is difficult to understand for whom this book is intended. The standard textbooks on genetics in ophthalmology describe all these

² In 1924, the old *Bulletin of the Society of Physicians and Naturalists of Iași* (1887) changed its name into *The Medico-Surgical Journal of the Society of Physicians and Naturalists of Iași*.

³ He – knowing only the initial of the author's first name, the reviewers automatically thought sometimes E. Puscariu was a man.

conditions, and many more, and the author's classification .(.) is neither standard, nor, in the reviewer's opinion, of clinical value"(89,90). The same was outlined in another review by a well-known Italo-Swiss ophthalmologist, Prof. Enrico Bernardo Streiff from Lausanne, who pointed out similar aspects, appreciating that Pușcariu proposed a "personal classification" and her synthesis discussed cases mainly identified in the specialty literature (90). In 1964, in the *Archives of Ophthalmology*, Dr. Ellen Francis Regan concluded her own book review by noticing that "Apart from [Prof. Puscariu's] rather unusual classification, this monograph contains no original material nor any critical analyses" (91).

Elena Pușcariu and the Society of Physicians and Naturalists of Iași

Like most of the valuable medical university teachers in Iași, Elena Pușcariu was a member of the *Society of Physicians and Naturalists of Iași* (SMN), of the Editorial Committee of its *Medico-Surgical Journal* and was elected SMN president in 1927. Her husband, Prof. Emil Pușcariu, had also held the same position in 1907-1908, whereas her father, Prof. Aron Densușianu, had been in his turn a SMN member for a while (92). A constant collaborator of *The Medical-Surgical Journal of the Society of Physicians and Naturalists of Iași*, she submitted to this publication interesting specialty studies, but, as a refined humanist from the Circa-Densușianu-Pușcariu family, she signed in parallel, in the same journal, a series of five articles devoted to the history of medicine, philosophy and medical ethics: "Reflections on the doctor, the patient, the clinician, the eye, on blindness and ophthalmology" (1934); "Pensée et philosophie scientifique" (1938); "Platon.Cosmogonie et médecine" (1943); "Medicine in the pre-Hippocratic age. Hippocrates and his work: philosophy, biology, medicine, doctrine, ethics and deontology" (in two parts, 1946). In 1931, on the occasion of a decade of activity of the Eye Diseases Clinic she directed, the Society of Physicians and Naturalists of Iași dedicated to her a tribute issue of "The Medico-Surgical Journal. Bulletin of the Society of Physicians and Naturalists of Iași", which was reaching its 42nd year of publication. This special number represented: "A

warm tribute of admiration and boundless love paid by her students and collaborators." After the eulogy addressed by the SMN through its president, Professor dr. Ion Bălțeanu, the volume included a detailed characterisation of Prof. Pușcariu's Clinic and its remarkable results by Dr. Dumitru Lăzărescu (14,15). Then a series of scientific articles followed authored by Drs. Eugenia Lăzărescu, Ecaterina Triandaf, Dumitru Lăzărescu, Jules Nitzulescu, Grigore Iamandi, G. Cerne, her close coworkers. The stuff of the Clinic and its academic Department thoroughly presented the evident achievements of the period ensuing the First World War, despite the shortages of all sorts, the inadequate space itself and a much larger population that had to be assisted in Iași, as well as an increased number of students, now coming from Moldova, but also from its former historical territories - Bessarabia and Bukovina.However, professional research and medical care did not lack in the Clinic modest setting, where only the spirit gave life and hope.

Elena Pușcariu in the *Medico-Surgical Journal of the Society of Physicians and Naturalists of Iași*.

As a humanist with a solid cultural background, Prof. Pușcariu also delivered lectures and wrote on the history of medicine and medical ethics. Here are five of her contributions.

1.In *The Medical-Surgical Journal of the Society of Physicians and Naturalists in Iasi* [Revista Medico-Chirurgicală a SMN], no.1/1935, Elena Pușcariu published her notes of the "Monday Course, November 5, 1934, with students of the VI year", containing "*Reflections on the doctor, the patient, the clinicians, the eye, blindness and ophthalmology*" (in Romanian) (84).It was a lecture on aspects of medical ethics and deontology, but equally on social medicine, bringing together the convictions she reached after a long medical career, constantly caring for the sick"...*"For a doctor to fulfill this very important role of caring for the sick well, - she emphasised - it is not enough to know books, but one must have aptitudes and qualities, both physical, intellectual and moral; all are equally important and indispensable."* "The moral qualities of the doctor must be: disinterestedness and lack of egoism, carried, if possible, to the

point of altruism.” The experienced clinician she was observed: “the patient will present various reactions, his emotional state will be disturbed, altered, and we must take all this into account if we want the therapy... to yield its best result.” Here, however, deception can easily occur: “The uneducated public - the Magistra pointed out - is more impressed by the mystery and the inexplicable than by anything else; our incantations, the care for the sick with prayers made by priests, the pilgrimages to miraculous places, such as Lourdes, and others seek to influence only the patient's state of mind; and the successes they sometimes have are explained by this.” “One becomes a good clinician by examining the cases completely, and from daily contact with the diseased”, perfecting his/her spirit of observation, while also giving importance to laboratory research. The responsibility for the laboratory of her own Clinic was “entrusted to Dr. J. Nițulescu, a former fellow of the Rockefeller Institute” in the USA. The doctor must be “up to date with everything that proves effective” and respect “the principles of ethics and morality, both in his relations with the sick and with the sick's entourage, as well as with his colleagues; most of the principles that make up medical deontology are (...) formulated in the Hippocratic Oath”. And quoting Prof.dr. Ion Nanu-Muscel, the famous internist in Bucharest, she added: “When studying morbid phenomena, we must not forget the patient.” “Let us seek that our conduct never deviates from true Christian conduct, let us beware of falling into excesses of scientific and experimental research, which could be dangerous for the diseased person.” She concluded by advocating for the prevention of social diseases that lead to eye pathology, for education and the improvement of working and living conditions, which would greatly reduce the number of blind people in the country, because “eye diseases are an indicator of the sanitary condition of a region and indirectly of the economic condition with which health is closely linked.”

2. In 1938, also in the SMN periodical, she published in French the study entitled “*Thought and Scientific Philosophy*” [*Pensée et philosophie scientifique*], the text of the inaugural

conference of the courses at the Faculty of Medicine in Iași, held on November 1, 1937 (93). In a concise, but complex, discourse on the history and philosophy of science, Elena Pușcariu demonstrated the interrelationship between the advance of medicine, the progress of knowledge as a whole, and the philosophical and ethical-deontological repercussions of this evolution. Hippocrates, Galen, Paracelsus built philosophical theories parallel to strictly biological or physico-chemical ones. Descartes continued Aristotle, followed by Galileo, Newton, Leibniz, Roger Bacon with “*Novum Organon*”, believing that the truth could be found. After Boerhaave's mechanism, came dynamism and vitalism. Schiller believed, however, that logic is not an instrument - organon - of discoveries, outside of experience. The combining logic, philosophy, psychology with philosophy and art abounds in her evocation: Voltaire, d'Alembert, Maupertuis, Lagrange, Fermat, Laplace, Gauss, Lavoisier, Maxwell, Auguste Comte or Karl Pearson, the mathematician for whom “matter is the immaterial in motion.” The recourse to the physicist Reichenbach illustrated another facet: “Natural sciences have taught us that reason is «not a rigid cabinet with logical boxes», that thinking is not «a perpetual repetition of received and inherited norms», «but that man can reach forms of thought, which he did not feel in a previous state».” Meyerson appreciated that the essence of human thinking is characterized by advancement and progress. However, Léon Brunschwig added in “*The Ages of Intelligence*” that the primitive understands the universe more easily than the 20th century scientist. “Through relativity we arrived at the notion that space and time are inseparable; through this theory the notions of space-time-gravity merge into a unity subject to perfect mathematical laws”- Pușcariu noted. The fascinating 19th century illuminated the 20th century through evolutionism, transformism, through Claude Bernard, Bichat, Virchow, Pasteur, the Curies, through experimental medicine, anatomical-clinical and bacteriological medicine, radioactivity. What produced a breach in determinism was quantum theory; wave mechanics, hazard and Heisenberg's uncertainty principles emerged together with

statistical methods that offer hitherto unknown possibilities, probabilities, variations. Einstein, Planck, Bohr, de Broglie, Compton, Dirac, Schrödinger...put back into debate the intimate connection between the laws of nature and the realm of a supreme intelligence, between spirit and matter, the non-Euclidean geometry of Bolyai, Lobatschewski and Riemann completed the picture, and relativity overturned Kantian apriorism. The astronomer Eddington preferred the poetic explanation of the poet Omar Khayyam, Bergson noted that "life is a specific phenomenon that cannot be integrated into the inanimate domain", and Alexis Carrel investigated "Man, this unknown". Mitogenetic rays fascinated Gurwitsch and Marinescu..As it was from the beginning, philosophy had to be scientific, and science philosophical, determining each other. The lecture ended with two prototype images of The Thinker: one by Michelangelo illustrating the "Magnificent" Lorenzo de Medici at the tomb; the other classical one, by Auguste Rodin (Fig.9). The conference finally invoked the goddess Pallas Athena, symbol of Wisdom, "daughter of Thought". Thinking, here is a "force that nothing can limit and which, when properly directed, becomes one of the greatest benefits of man and humanity."



Fig.9.a.Michelangelo. Lorenzo de Medici (Florence, Basilica di San Lorenzo)



Fig.9.b. Rodin The Thinker

3. "Plato. *Cosmogony and Medicine*" [*Plato. Comogonie et Médecine*] was published in 1943 (94). Opening the article, Elena Pușcariu quoted from Pythagoras, according to whom "Everything necessary for wisdom is found in medicine", and from Hippocrates, according to whom "If there are ways to make people better, they must be sought in medicine." Plato revealed himself to the author like the Christian God, as a pioneer of Christianity, giving confidence in a good God and in immortality. In his writings "his principles and doctrines of philosophy, metaphysics, morality, religion are exposed, and in "Timaeus", his conceptions of nature, cosmogony and medicine." It is a world of perfect Forms and Ideas. And man must strive for perfection "only through goodness, truth, and justice, having a clean, sober life, free from vices and degrading passions", and "at death, the soul will enjoy supreme happiness in eternity." After revisiting the pre-Socratic Thales of Miletus, Anaximander and Anaximenes, she showed how the notions of *physis*, the physical state of an element, of *apeiron* and *pneuma*, vast, spiritualised, divinised energies, prior to all, were

created. She recalls Heraclitus of Ephesus, who gave science the notion of movement, for everything is transformed, there is no immobility. In the organism, assimilation and disassimilation, life and death, are balanced. “Everything flows”, and Fire is the principle of everything; through condensation and liquefaction, it becomes air, water, earth. The cosmic thought is the Logos. The school of Elea was static. Then Pythagoras revealed the beauty of numbers, practised a mystical medicine, treating through diet and music. Harmony was found in everything that exists and generates the unity of the universe. Every particle of life is a reflection of the universe. Mentioned in turn are Alcmaeon and Philolaus, Empedocles, Leucippus, Democritus and Anaxagoras, the one who imposed *Noûs* (intelligence) as the superior principle, governing both the organism and the universe, as also happened in the *Atharva-Veda*. Trendelenburg and Meyerson also appreciated that logic involves assuming “a harmony between the forms of thought and the thing itself.” The discussion finally reached Hippocrates, analysed in detail, who, “by his luminous thinking, must be placed next to Socrates, Plato and Aristotle.” The epistemic excursus, however, returns to Plato, contemporary with Hippocrates, and to his ideas about cosmogony, nature and medicine, expounded in the dialogue “Timaeus”, which rendered him “a great precursor of general physiology and pathology.” Comparable to those described in the *Atharva-Veda*, the author reveals that the organisation of the universe and man is similar in Plato, which refers to the creation of the world. “Plato manages to explain normal organic processes, such as respiration, nutrition, growth, old age, and the function of the sense organs, as well as pathological disorders through the speculations of the mind that were then the only means of research.” After a detailed analysis, Dr. Pușcariu concluded: “Plato, not only in

philosophy, but also in medicine and physiology, adopted and developed with a penetrating mind and a rare depth of thought already known principles, such as that of the four elements, indivisible particles, dispositions. All these facts make Plato a great precursor of physiology and general pathology.”

4. “*Medicine in the pre-Hippocratic era. Hippocrates and his work: philosophy, biology, medicine, doctrine, ethics and deontology*” (I, 1946) analysed the most significant period since the beginning of Western medicine, after, as the author specified, she had made three other presentations in March 1943 on iatrohistory, the first having as its subject “Introduction to the study of the history of medicine. Medicine in man from the Paleolithic and Neolithic eras and among the Sumerians”, the second focusing on “Medicine among the Chinese, Indians and Egyptians”, and the third dealing with “Medicine among the Greeks in the legendary era and the pre-Hippocratic philosophical schools” (95). “Hippocrates – stated Elena Pușcariu – is the creator of modern medicine, that is, medicine based on observational facts and subject to a rarely encountered critical spirit, thus arriving at concepts some of which, forgotten for a while, have been revived, becoming more brilliant through confirmation with the help of new research methods: as an example we can cite the preclinical phase of diseases, the concept of the terrain in infectious diseases.” She quickly reviewed then the connection of ancient Greek medicine with both philosophy and ancient religion, hence legends and mythology. She reminded the tradition of Asklepios and the Asklepiades, mentioning some of the temples intended for the care and cure of the sick, integrating oneiromancy, psychotherapy, and physical exercises among others. Hippocrates also, Dr. Pușcariu pointed out, received his education in the gymnasium, where “in addition to seeking a harmonious development of the individual, geometry, philosophy, rhetoric, poetry, music were studied”, but accidents also occurred. Therefore, the anatomy and physiology of the body were better known, gymnasiums

being “the place of origin of civil medicine.” “medicine was learned from father to son. Then special facilities called iatreion were built, equipped with the necessary for medical and surgical treatments, they were a kind of dispensaries.” Where patients were hospitalised, such offices became sanatoriums. As famous doctors appeared, medical schools were born, like the one of Hippocrates. There were some pilgrim doctors – periodeutes – who traveled, taught, treated. It also reminds us of the Hippocratic aphorisms which, alone, could confer immortality on him. “Hippocrates must be considered as a philosopher and a physician. He was concerned with general problems concerning man, as well as with medical sciences in relation to nature and the universe. A follower of the dialectical method of Heraclitus, Hippocrates started his research from the principle of the law of change, a law that belongs to all phenomena, including those related to medicine.”

5. “*Medicine in the pre-Hippocratic era. Hippocrates and his work. Philosophy, biology, medicine, doctrine, ethics and deontology*” (II) was a conference held on December 11, 1943 in the Amphitheater of the Faculty of Medicine and included in the *Revue Médico-Chirurgicale. Bulletin de la Société des Médecins et des Naturalistes de Jassy* in 1946 (96). Pușcariu considered that for “Hippocrates, naturism and vitalism are synonymous. Nature is ordering by itself. Hippocrates' conception of the world is materialist. There is no spirit and matter, there is only nature; as a parenthesis we could say that current thinking following new research in physics reached a similar synthesis. Nature – Physis –, the reunion of all phenomena is not considered as a will, as a conscious force external to the world and consciousness. Psyche, the soul, is not a vital principle. Life is made up of water and fire. These elements are constantly tending towards each other; if this movement stops, life ceases. The soul has the same composition as the body. The soul of man is constantly renewed until death: the soul is a mixture of water and fire and is an organic part of the being.” Developing the connection between Hippocrates and Biology in the positivist-rationalist spirit of the 20th century, Elena Pușcariu emphasised that, during his

travels, Hippocrates made findings that he exposed in his writing on “*Air, Water and Places*”, making biological observations of extreme importance, also reaching social and political considerations. “Hippocrates emphasises with the greatest conviction that external agents and the environment have an action on the individual during embryonic development and through this he is the creator of orthogenesis.” Regarding embryology, he did not believe in preformation like Plato, but believed that “tissues and organs result from the proportions of the physical characteristics of substances.” Hippocrates persisted in confusing arteries, veins, muscles and tendons. It was admitted that “life depends on the heat.” Functions were little known. He described epilepsy, tetanus, convulsions, phthisis, “affirmed the contagious and hereditary nature of pulmonary tuberculosis; he established the relationship between phthisis, Pott's disease and ossifying abscesses; it took the genius of Hippocrates to establish this fact, confirmed after so many centuries through laboratory research” etc. Compared to medical therapeutics, surgical therapy was more advanced. Among the surgical diseases, those of the bones and joints were masterfully described. Bathing and lifestyle were essential, understanding that hygiene is the best medicine. For Hippocrates, “health depended on the relationship between nutrition and physical exercise” so that the (chronic) patients “left the temples of Aesculapius and went to be treated in gymnasiums.” Hippocrates created three doctrines in medicine: The Doctrine of Humors, in correlation with which he defined crassa, oscillating between eucrasia and dyscrasia. The Doctrine of Temperaments and the Doctrine of Prognosis. From the physician's duties, Hippocrates created Medical Deontology, which is found in the writings: *On Art, The Law, On The Physician, On Benevolence and The Oath*.

In conclusion, “Hippocrates was very great through his spirit of observation and the sharpness of his intelligence, reaching the vastest conceptions on life, health and disease; he is perhaps even greater through the special importance he gave to the moral side of medicine. He says: «there is no difference between

philosophy and medicine. The philosopher physician is equal to the gods»”...

A philosopher physician

Undoubtedly, in her turn Prof. Dr. Elena Pușcariu was one of those philosopher physicians equal to the gods, who demonstrated knowledge and skill, creativity, civic spirit and moral consciousness. As a scientist she gained worldwide visibility as she also published her scientific contributions, some of them of great interest, in outstanding journals of ophthalmology edited in France, Great Britain, Germany, Italy, Latin America, and the USA. She maintained tight connections with valuable foreign specialists. Hence her studies were known, reviewed and cited in international periodicals. In her impressive work, Elena Pușcariu, a personality of universal culture, addressed almost all the specific ophthalmological issues, but she equally treated and investigated ophthalmological repercussions of general pathology, along with the epidemiological and social circumstances that favoured eye diseases to develop. As a highly schooled lady doctor she cultivated in her followers, students and colleagues medical professionalism, humanism and deontological principles. For her patients she tried to raise public awareness of health issues. In the 1990s her name was proposed to be given to the Ophthalmology Clinic of the “St. Spiridon” Hospital in Iași, and in 2019 the new “Nicolae Leon” Building of the “Grigore T. Popa” University of Medicine and Pharmacy inaugurated the “Elena Densușianu Pușcariu” Lecture Hall. She certainly can still represent a role model and convey her heritage.

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